PATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

To:

Assistant Commissioner for Patents
United States Patent and Trademark Office
Box PCT
Washington, D.C.20231
ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 25 August 2000 (25.08.00)	
International application No. PCT/EP00/00877	**Applicant's or agent's file reference** 19595P WO
International filing date (day/month/year) 03 February 2000 (03.02.00)	**Priority date** (day/month/year) 03 February 1999 (03.02.99)
Applicant FERBY, Ingvar, Mats et al	

1. The designated Office is hereby notified of its election made:

[X] in the demand filed with the International Preliminary Examining Authority on:

28 June 2000 (28.06.00)

[ ] in a notice effecting later election filed with the International Bureau on:

2. The election [X] was

[ ] was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Facsimile No.: (41-22) 740.14.35

Authorized officer

Zakaria EL KHODARY

Telephone No.: (41-22) 338.83.38

PCT

REQUEST

The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty.

For receiving Office use only

International Application No.

International Filing Date

Name of receiving Office and "PCT International Application"

Applicant's or agent's file reference *(if desired) (12 characters maximum)* 19595P WO

Box No. I TITLE OF INVENTION

Protein with cell proliferation and cell division modulating activity and DNA encoding such protein

Box No. II APPLICANT

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)*

Europäisches Laboratorium für
Molekularbiologie (EMBL)
Meyerhofstraße 1
69117 Heidelberg
DE

☐ This person is also inventor.

Telephone No.

Facsimile No.

Teleprinter No.

State *(that is, country)* of nationality: DE

State *(that is, country)* of residence: DE

This person is applicant for the purposes of: ☐ all designated States ☒ all designated States except the United States of America ☐ the United States of America only ☐ the States indicated in the Supplemental Box

Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)*

FERBY Ingvar Mats
Dantestraße 55
69115 Heidelberg
DE

This person is:

☐ applicant only

☒ applicant and inventor

☐ inventor only *(If this check-box is marked, do not fill in below.)*

State *(that is, country)* of nationality: SE

State *(that is, country)* of residence: DE

This person is applicant for the purposes of: ☐ all designated States ☐ all designated States except the United States of America ☒ the United States of America only ☐ the States indicated in the Supplemental Box

☒ Further applicants and/or (further) inventors are indicated on a continuation sheet.

Box No. IV AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE

The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as: ☐ agent ☐ common representative

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)*

Weickmann H., Weickmann F.A., Huber B.,
Liska H., Prechtel J., Böhm B., Weiß W.,
Tiesmeyer J., Herzog M., Ruttensperger B., Jordan V.
Kopernikusstraße 9, 81679 München / DE

Telephone No. 089/ 455 63-0

Facsimile No. 089/ 455 63-999

Teleprinter No. 522 621 wepat d

☐ **Address for correspondence:** Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.

Continuation of Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)

If none of the following sub-boxes is used, this sheet should not be included in the request.

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)*

NEBREDA M. Angel Rodriguez
Am Grossen Wald 16
69251 Gaiberg
DE

This person is:
- [ ] applicant only
- [x] applicant and inventor
- [ ] inventor only *(If this check-box is marked, do not fill in below.)*

State *(that is, country)* of nationality: ES

State *(that is, country)* of residence: DE

This person is applicant for the purposes of:
- [ ] all designated States
- [ ] all designated States except the United States of America
- [x] the United States of America only
- [ ] the States indicated in the Supplemental Box

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)*

This person is:
- [ ] applicant only
- [ ] applicant and inventor
- [ ] inventor only *(If this check-box is marked, do not fill in below.)*

State *(that is, country)* of nationality:

State *(that is, country)* of residence:

This person is applicant for the purposes of:
- [ ] all designated States
- [ ] all designated States except the United States of America
- [ ] the United States of America only
- [ ] the States indicated in the Supplemental Box

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)*

This person is:
- [ ] applicant only
- [ ] applicant and inventor
- [ ] inventor only *(If this check-box is marked, do not fill in below.)*

State *(that is, country)* of nationality:

State *(that is, country)* of residence:

This person is applicant for the purposes of:
- [ ] all designated States
- [ ] all designated States except the United States of America
- [ ] the United States of America only
- [ ] the States indicated in the Supplemental Box

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)*

This person is:
- [ ] applicant only
- [ ] applicant and inventor
- [ ] inventor only *(If this check-box is marked, do not fill in below.)*

State *(that is, country)* of nationality:

State *(that is, country)* of residence:

This person is applicant for the purposes of:
- [ ] all designated States
- [ ] all designated States except the United States of America
- [ ] the United States of America only
- [ ] the States indicated in the Supplemental Box

- [ ] Further applicants and/or (further) inventors are indicated on another continuation sheet.

Box No.V DESIGNATION OF STATES

The following designations are hereby made under Rule 4.9(a) *(mark the applicable check-boxes; at least one must be marked)*

Regional Patent

- ☒ AP **ARIPO Patent:** GH Ghana, GM Gambia, KE Kenya, LS Lesotho, MW Malawi, SD Sudan, SL Sierra Leone, SZ Swaziland, TZ United Republic of Tanzania, UG Uganda, ZW Zimbabwe, and any other State which is a Contracting State of the Harare Protocol and of the PCT
- ☒ EA **Eurasian Patent:** AM Armenia, AZ Azerbaijan, BY Belarus, KG Kyrgyzstan, KZ Kazakhstan, MD Republic of Moldova, RU Russian Federation, TJ Tajikistan, TM Turkmenistan, and any other State which is a Contracting State of the Eurasian Patent Convention and of the PCT
- ☒ EP **European Patent:** AT Austria, BE Belgium, CH and LI Switzerland and Liechtenstein, CY Cyprus, DE Germany, DK Denmark, ES Spain, FI Finland, FR France, GB United Kingdom, GR Greece, IE Ireland, IT Italy, LU Luxembourg, MC Monaco, NL Netherlands, PT Portugal, SE Sweden, and any other State which is a Contracting State of the European Patent Convention and of the PCT
- ☒ OA **OAPI Patent:** BF Burkina Faso, BJ Benin, CF Central African Republic, CG Congo, CI Côte d'Ivoire, CM Cameroon, GA Gabon, GN Guinea, GW Guinea-Bissau, ML Mali, MR Mauritania, NE Niger, SN Senegal, TD Chad, TG Togo, and any other State which is a member State of OAPI and a Contracting State of the PCT *(if other kind of protection or treatment desired, specify on dotted line)* .....

National Patent *(if other kind of protection or treatment desired, specify on dotted line)*:

- ☒ AE United Arab Emirates
- ☒ AL Albania
- ☒ AM Armenia
- ☒ AT Austria
- ☒ AU Australia
- ☒ AZ Azerbaijan
- ☒ BA Bosnia and Herzegovina
- ☒ BB Barbados
- ☒ BG Bulgaria
- ☒ BR Brazil
- ☒ BY Belarus
- ☒ CA Canada
- ☒ CH and LI Switzerland and Liechtenstein
- ☒ CN China
- ☒ CR Costa Rica
- ☒ CU Cuba
- ☒ CZ Czech Republic
- ☒ DE Germany
- ☒ DK Denmark
- ☒ DM Dominica
- ☒ EE Estonia
- ☒ ES Spain
- ☒ FI Finland
- ☒ GB United Kingdom
- ☒ GD Grenada
- ☒ GE Georgia
- ☒ GH Ghana
- ☒ GM Gambia
- ☒ HR Croatia
- ☒ HU Hungary
- ☒ ID Indonesia
- ☒ IL Israel
- ☒ IN India
- ☒ IS Iceland
- ☒ JP Japan
- ☒ KE Kenya
- ☒ KG Kyrgyzstan
- ☒ KP Democratic People's Republic of Korea
- ☒ KR Republic of Korea
- ☒ KZ Kazakhstan
- ☒ LC Saint Lucia
- ☒ LK Sri Lanka
- ☒ LR Liberia
- ☒ LS Lesotho
- ☒ LT Lithuania
- ☒ LU Luxembourg
- ☒ LV Latvia
- ☒ MA Morocco
- ☒ MD Republic of Moldova
- ☒ MG Madagascar
- ☒ MK The former Yugoslav Republic of Macedonia
- ☒ MN Mongolia
- ☒ MW Malawi
- ☒ MX Mexico
- ☒ NO Norway
- ☒ NZ New Zealand
- ☒ PL Poland
- ☒ PT Portugal
- ☒ RO Romania
- ☒ RU Russian Federation
- ☒ SD Sudan
- ☒ SE Sweden
- ☒ SG Singapore
- ☒ SI Slovenia
- ☒ SK Slovakia
- ☒ SL Sierra Leone
- ☒ TJ Tajikistan
- ☒ TM Turkmenistan
- ☒ TR Turkey
- ☒ TT Trinidad and Tobago
- ☒ TZ United Republic of Tanzania
- ☒ UA Ukraine
- ☒ UG Uganda
- ☒ US United States of America
- ☒ UZ Uzbekistan
- ☒ VN Viet Nam
- ☒ YU Yugoslavia
- ☒ ZA South Africa
- ☒ ZW Zimbabwe

Check-boxes reserved for designating States which have become party to the PCT after issuance of this sheet:

- ☐ .....
- ☐ .....

Precautionary Designation Statement: In addition to the designations made above, the applicant also makes under Rule 4.9(b) all other designations which would be permitted under the PCT except any designation(s) indicated in the Supplemental Box as being excluded from the scope of this statement. The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time limit. *(Confirmation (including fees) must reach the receiving Office within the 15-month time limit.)*

Box No. VI PRIORITY CLAIM ☐ Further priority claims are indicated in the Supplemental Box.

Filing date of earlier application *(day/month/year)*	Number of earlier application	Where earlier application is: national application: country	regional application:* regional Office	international application: receiving Office
item (1) 03.02.1999	99 102 172.6		EP	
item (2)				
item (3)				

☐ The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) *(only if the earlier application was filed with the Office which for the purposes of the present international application is the receiving Office)* identified above as item(s): _____

* *Where the earlier application is an ARIPO application, it is mandatory to indicate in the Supplemental Box at least one country party to the Paris Convention for the Protection of Industrial Property for which that earlier application was filed (Rule 4.10(b)(ii)). See Supplemental Box.*

Box No. VII INTERNATIONAL SEARCHING AUTHORITY

Choice of International Searching Authority (ISA) *(if two or more International Searching Authorities are competent to carry out the international search, indicate the Authority chosen; the two-letter code may be used)*: ISA /

Request to use results of earlier search; reference to that search *(if an earlier search has been carried out by or requested from the International Searching Authority)*:

Date *(day/month/year)* | Number | Country *(or regional Office)*

Box No. VIII CHECK LIST; LANGUAGE OF FILING

This international application contains the following number of sheets:

request	:	4
description (excluding sequence listing part)	:	12
claims	:	3
abstract	:	1
drawings	:	5
sequence listing part of description	:	4
Total number of sheets	:	29

This international application is accompanied by the item(s) marked below:

1. ☒ fee calculation sheet
2. ☐ separate signed power of attorney
3. ☐ copy of general power of attorney; reference number, if any:
4. ☐ statement explaining lack of signature
5. ☐ priority document(s) identified in Box No. VI as item(s):
6. ☐ translation of international application into (language):
7. ☐ separate indications concerning deposited microorganism or other biological material
8. ☐ nucleotide and/or amino acid sequence listing in computer readable form
9. ☐ other *(specify)*:

Figure of the drawings which should accompany the abstract:

Language of filing of the international application: English

Box No. IX SIGNATURE OF APPLICANT OR AGENT

Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the request).

For receiving Office use only

1. Date of actual receipt of the purported international application:
2. Drawings: ☐ received: ☐ not received:
3. Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application:
4. Date of timely receipt of the required corrections under PCT Article 11(2):
5. International Searching Authority (if two or more are competent): ISA /
6. ☐ Transmittal of search copy delayed until search fee is paid.

For International Bureau use only

Date of receipt of the record copy by the International Bureau:

See Notes to the request form

PATENT COOPERATION TREATY

PCT

REC'D 21 MAY 2001

WIPO PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
19595P WO		
International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/EP00/00877	03/02/2000	03/02/1999
International Patent Classification (IPC) or national classification and IPC C12N15/12		
Applicant EUROPÄISCHES LABORATORIUM FÜR MOLEKULARBIOLOGIE		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 6 sheets, including this cover sheet.

   ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of 4 sheets.

3. This report contains indications relating to the following items:

   - I ☒ Basis of the report
   - II ☐ Priority
   - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - IV ☐ Lack of unity of invention
   - V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations suporting such statement
   - VI ☒ Certain documents cited
   - VII ☒ Certain defects in the international application
   - VIII ☒ Certain observations on the international application

Date of submission of the demand	Date of completion of this report
28/06/2000	17.05.2001
Name and mailing address of the international preliminary examining authority: European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer SCHEFFZYK, I Telephone No. +49 89 2399 8602

Form PCT/IPEA/409 (cover sheet) (January 1994)

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/EP00/00877

I. Basis of the report

1. With regard to the **elements** of the international application *(Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17))*:
Description, pages:

1-16	as originally filed			

Claims, No.:

2-16	as received on	19/02/2001	with letter of	19/02/2001
1	with telefax of	09/05/2001		

Drawings, sheets:

1/5-5/5	as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

   These elements were available or furnished to this Authority in the following language: , which is:

   ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).

   ☐ the language of publication of the international application (under Rule 48.3(b)).

   ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

   ☐ contained in the international application in written form.

   ☐ filed together with the international application in computer readable form.

   ☐ furnished subsequently to this Authority in written form.

   ☐ furnished subsequently to this Authority in computer readable form.

   ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

   ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

☐ the description, pages:

☐ the claims, Nos.:

☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-16
	No:	Claims	
Inventive step (IS)	Yes:	Claims	1-16
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	1-8,10,11
	No:	Claims	9, 12-16: see section VIII/4).

2. Citations and explanations
see separate sheet

VI. Certain documents cited

1. Certain published documents (Rule 70.10)

and / or

2. Non-written disclosures (Rule 70.9)

see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:
see separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the

claims are fully supported by the description, are made:
see separate sheet

SECTION V----------

Presently claimed subject-matter is neither taught nor suggested by the available prior art. Correspondingly, it appears that present claims comply with the requirements of Art. 33(2)(3) PCT.

SECTION VI----------

Lenormand Jl. et al., EMBO Journal vol. 18, no. 7, 1 April 1999

Ferby I.et al., Genes Dev., vol. 13, no. 16, 15.08.1999

SECTION VII----------

Claims 6 and 7 are deemed redundant in view of claim 1 and claim 4, respectively.

SECTION VIII----------

1). The expression "very similar" used in claim 1(e) is relative and thus open to interpretation. Correspondingly, the use thereof renders the scope of the claim unclear.

2). The term "substantially" used in claim 7 also is open to interpretation and thus its use also renders the scope of said claim unclear (Art. 6 PCT). In addition, concerning claim 7 it is noted that it is unclear whether both of the activities mentioned in claim 6 should be maintained or only one of them.

3). Present application only shows a function of claimed SEQ.ID.NOS.: 2 and 4 (Is26). However, with respect to the activity of SEQ.ID.NOS.: 1 and 3 present specification is completely silent ; i.e the confirmation mentioned in the application on page 10 is missing. (Art. 5 and 6 and Rule 33(4) PCT).

4). Present application does not show any facts and data showing the suitablity of presently claimed proteins for medical treatments. Thus, claims 12-16 are not supported by present specification (Art. 5 and 6 PCT).

5). Concerning claim 16 it is noted that it is highly unlikely that any part of the sequence shown in SEQ.ID.NOS. 1 and 2 is suitable for the use claimed in said claim (Art. 6 PCT). Moreover, due to the term "part" novelty of this claim over the teachings of EP-A-0 835 937 (1) and WO 98/21342 (2) is questionable.

6). Claims 9 and 12-16 relate to subject-matter considered by this Authority to be covered by the provisions of Rule 67.1(iv) PCT. Consequently, no opinion will be formulated with respect to the industrial applicability of the subject-matter of these claims (Article 34(4)(a)(i) PCT).

19595P WO/BBcl
EMBL

New claim 1

1. A DNA sequence,

characterized in that it contains:

(a) a sequence as shown in SEQ ID NO.1 or 2,

(b) a sequence which encodes the same protein as (a) but is degenerate as a result of the genetic code,

(c) a sequence hybridizing under stringent conditions to the sequences of (a) and/or (b),

(d) a genomic sequence consisting of the sequence according to (a) or (b) and further containing one or more introns,

(e) a sequence which codes for a protein with at the most up to 5% of the amino acid content of the protein according to SEQ ID NO.3 or 4 of deletions, substitutions and/or additions of amino acids and having the same or a very similar activity.

PCT/EP00/00877
EMBL

New claims

1. A DNA sequence,
characterized in that it encodes a protein that is capable of inducing oocyte maturation and/or modulating cell division and contains:
   (a) a sequence as shown in SEQ ID NO.1 or 2,
   (b) a sequence which encodes the same protein as (a) but is degenerate as a result of the genetic code,
   (c) a sequence hybridizing under stringent conditions to the sequences of (a) and/or (b),
   (d) a sequence according to (a), (b) or (c), wherein this sequences contain one or more introns,
   (e) a sequence which differs from (a), (b), (c) or (d) due to its origin from a different species, but encodes a protein with the same or a very similar activity.

2. A DNA sequence according to claim 1,
characterized in that it further contains expression control sequences operably linked to the coding DNA sequence.

3. Expression vector,
characterized in that it contains a DNA sequence according to anyone of claims 1 or 2.

4. Protein
characterized in that it is encoded by a DNA sequence according to anyone of claims 1 or 2.

5. Protein according to claim 4,
characterized in that it contains an amino acid as shown in SEQ ID NO.3 or 4.

6. Protein according to claim 4 or 5,
characterized in that it shows an oocyte maturation inducing activity and/or a cell division modulating activity.

7. Protein according to anyone of claims 4 to 6,
characterized in that it contains deletions, substitutions and/or additions of amino acids that do not substantially affect its activity.

8. Protein according to anyone of claims 4 to 7,
wherein a second protein is fused to build a fusion protein.

9. Use of a protein according to anyone of claims 4 to 8 for inducing oocyte maturation and/or modulating cell division and/or differentiation and/or proliferation.

10. Pharmaceutical composition containing as active agent a protein according to anyone of claims 5 to 8.

11. Pharmaceutical composition according to claim 10, containing the protein in combination with a pharmaceutically acceptable carrier or adjuvant.

12. Use of a pharmaceutical composition according to claim 10 or 11 for modulating cell proliferation, cell differentiation, or for fertility treatments.

13. Use of a protein according to anyone of claims 4 to 8 as a diagnostic marker for cell proliferation and/or cell differentiation.

14. Use of a protein according to claims 4 to 8 as a target for the identification of drugs that modulate cell cycle progression and/or cell proliferation and/or cell differentiation.

15. Use according to claim 14 for the development of pharmaceuticals for

the treatment of cancer or other pathological situations with uncontrolled cell proliferation.

16. Use of a DNA sequence according to anyone of claims 1 or 2 or a part thereof as diagnostic marker for cell proliferation and/or cell differentiation for hybridization expriments to determine the amount of homologous nucleic acid sequences.

Claims

1. A DNA sequence,
characterized in that it contains:
(a) a sequence as shown in SEQ ID NO.1 or 2,
(b) a sequence which encodes the same protein as (a) but is degenerate as a result of the genetic code,
(c) a sequence hybridizing under stringent conditions to the sequences of (a) and/or (b),
(d) a genomic sequence containing the sequence of (a), (b) or (c) and further containing one or more introns,
(e) a sequence which differs from (a), (b), (c) or (d) due to its origin from a different species.

2. A DNA sequence according to claim 1,
wherein it encodes a protein that is capable of inducing oocyte maturation and/or modulating cell division.

3. A DNA sequence according to claim 1 or 2,
characterized in that it further contains expression control sequences operably linked to the coding DNA sequence.

4. Expression vector,
characterized in that it contains a DNA sequence according to anyone of claims 1 to 3.

5. Protein
characterized in that it is encoded by a DNA sequence according to anyone of claims 1 to 3.

6. Protein according to claim 5,
characterized in that it contains an amino acid as shown in SEQ ID NO.3 or 4.

7. Protein according to claim 5 or 6,
characterized in that it shows an oocyte maturation inducing activity and/or a cell division modulating activity.

8. Protein according to anyone of claims 5 to 7,
characterized in that it contains deletions, substitutions and/or additions of amino acids that do not substantially affect its activity.

9. Protein according to anyone of claims 5 to 8,
wherein a second protein is fused to build a fusion protein.

10. Use of a protein according to anyone of claims 5 to 9 for inducing oocyte maturation and/or modulating cell division and/or differentiation and/or proliferation.

11. Pharmaceutical composition containing as active agent a protein according to anyone of claims 5 to 9.

12. Pharmaceutical composition according to claim 11, containing the protein in combination with a pharmaceutically acceptable carrier or adjuvant.

13. Use of a pharmaceutical composition according to claim 10 or 11 for modulating cell proliferation, cell differentiation, or for fertility treatments.

14. Use of a protein according to anyone of claims 5 to 9 as a diagnostic marker for cell proliferation and/or cell differentiation.

15. Use of a protein according to claims 5 to 9 as a target for the identification of drugs that modulate cell cycle progression and/or cell proliferation and/or cell differentiation.

16. Use according to claim 15 for the development of pharmaceuticals for the treatment of cancer or other pathological situations with uncontrolled cell proliferation.

17. Use of a DNA sequence according to anyone of claims 1 to 3 or a part thereof as diagnostic marker for cell proliferation and/or cell differentiation for hybridization expriments to determine the amount of homologous nucleic acid sequences.